UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 301 S. PARK, DRAWER 10096
HELENA, MONTANA 59626-0096

Ref: 8MO

March 22, 2000

Bruce Erickson, Team Leader
Superior Ranger District
209 W. Riverside, P.O. Box 460
Superior, MT 59872

Re: Knox Brooks Timber Sales and Road Rehabilitation DEIS

Dear Mr. Erickson:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the Environmental Protection Agency, Region VIII, Montana Office (EPA) reviewed the above-referenced Draft Environmental Impact Statement (DEIS).

The EPA supports the Forest Service selection of Alternative E as the preferred alternative for the Knox Brooks Timber Sales and Road Rehabilitation Project. We recognize that resource trade-offs are involved in land management decisions, and that treatment of lodgepole pine timber stands experiencing mountain pine beetle infestation may result in impacts to other resources. Alternative E appears to strike a reasonable balance with the resource trade-offs by treating 1,500 acres of high pine beetle risk and 443 acres of moderate risk lodgepole pine stands, while minimizing erosion and sediment transport by limiting road construction to short-term temporary roads which will be obliterated after harvest, and avoiding construction of new permanent roads.

The EPA is pleased that the preferred alternative avoids construction of new permanent roads, constructs temporary roads on gentle terrain, obliterates and stabilizes all temporary roads constructed for the timber sales, and closes and stabilizes about 54.5 miles of existing roads. Improvements to forest road systems and reduction in road density are especially critical to protecting aquatic health and wildlife resources for the project area. We are also pleased that a buffer strip would be left between the stream and all harvest units (page III-99).

The discussion of soils in Chapter III (page III-36) indicates that all soils have high erosion potentials with severe limitations in terms of sediment production. We believe measures that are proposed to reduce erosion with harvest and tractor yarding on soils with high erosion potential should be more fully disclosed. We also believe that additional information should be provided regarding potential effects of proposed activities on wetlands in the project area, and additional information should be provided on usage of weed control chemicals and their potential aquatic effects.

The EPA also believes that monitoring is a necessary and crucial element in identifying and understanding the consequences of one's actions, and should be an integral part of any management decision. Specific monitoring information should be disclosed in the FEIS to assure that the effects of the proposed activities on water quality (i.e., physical, chemical and biological effects) and air quality will be determined.

We also have some questions regarding the novel Stewardship Contracting method of carrying out the Knox-Brooks Timber Sale Projects. It is stated (page II-18) that the Forest Service does not have a tool to conduct an economic analysis for stewardship contracts. We ask how the Forest Service will determine the best value to the government in awarding contracts if it doesn't have tools to conduct economic analysis? Will the value of trading timber be sufficient to equal the costs of treatment? A significant new element of Section 347 contracting according to our understanding is to include multi-party monitoring as part of the process. What procedures would be followed and which parties would be involved in this multi-party monitoring of the proposed treatments on the Knox-Brooks Project?

Our more detailed comments, questions, and concerns regarding the analysis, documentation, or potential environmental impacts of the Knox Brooks Timber Sales and Road Rehabilitation DEIS are enclosed for your review and consideration as you complete the Final Environmental Impact Statement (FEIS). Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the Knox Brooks Timber Sales and Road Rehabilitation DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information). A copy of EPA's rating criteria is attached.

As can be seen from the enclosed comments, although we support the selection of Alternative E as the preferred alternative, we have environmental concerns about timber harvest on lands with high erosion potential, wetland impacts, aquatic effects of herbicides, stewardship contracting, about the level of monitoring proposed to detect effects of management activities. EPA believes additional information is needed to fully assess and mitigate all potential impacts of the management actions.

The EPA appreciates the opportunity to review and comment on the DEIS. If we may provide further explanation of our concerns please contact Mr. Steve Potts of my staff in Helena at (406) 441-1140 ext. 232. Thank you for the opportunity to comment.

Sincerely,

Original Signed by John F. Wardell

John F. Wardell
Director
Montana Office

Enclosure

cc: Cindy Cody/Yolanda Martinez, EPA, 8EPR-EP, Denver
Earl Sutton, Forest Service-Region 1, EAP, Missoula
Stuart Lehman, MDEQ-Resource Protection Planning Bureau, Helena

EPA Comments on the Knox-Brooks Timber Sales and Road Rehabilitation Draft Environmental Impact Statement

Brief Project Overview:

The Superior Ranger District of the Lolo National Forest evaluated no action and four action alternatives to treat lodgepole pine stands experiencing a mountain pine beetle epidemic; rehabilitate water quality and fisheries by reducing sediment; and contribute timber to the economy. The Knox-Brooks area is located north and east of the Town of DeBorgia, Montana, and includes 29,300 acres primarily in the Twelvemile Creek drainage and partially in the Twin Creek drainage, tributary to the St. Regis River. The project area includes 26,250 acres of National Forest and 3,050 acres of private land.

Alternative A is the no action alternative.

Alternative B, the proposed action, would harvest 3,288 acres (41,556 CCF) including 698 acres regeneration harvest and 2,590 acres thinning; and 1,324 acres tractor yarding, 1,741 acres skyline yarding, and 151 acres helicopter removal. Burning will be used for post-harvest slash treatment, including 1,200 acres of underburning and excavator piling and burning on 2,100 acres. Approximately 1.6 miles of new road and 5.9 mile of temporary road would be constructed and 41.6 miles reconstructed. About 47.5 miles of existing road would be closed, stabilized, and decommissioned.

Alternative D was designed to avoid new road construction and timber harvest in elk security areas. Alternative D would harvest 2,519 acres (31,182 CCF) including 347 acres regeneration harvest and 2,172 acres thinning; and 994 acres tractor yarding, 1,057 acres skyline yarding, and 396 acres helicopter removal. Prescribed burning will be used for post-harvest slash treatment, including 700 acres of underburning and excavator piling and burning on 1,800 acres. Approximately 38.6 miles of road would be reconstructed. About 49.2 miles of existing road would be closed, stabilized, and decommissioned.

Alternative E was designed to access as much lodgepole pine as possible without helicopters, using only temporary roads located on gentle terrain to minimize erosion. Limited thinning would be allowed in elk security areas. Alternative E would harvest 2,519 acres (30,394 CCF) including 362 acres regeneration harvest and 2,157 acres thinning; and 1,189 acres tractor yarding, 1,258 acres skyline yarding, and no helicopter removal. Prescribed burning will be used for post-harvest slash treatment, including 700 acres of underburning and excavator piling and burning on 1,850 acres. Approximately 2.1 miles of temporary road would be constructed and 38.6 miles reconstructed.

About 54.5 miles of existing road would be closed, stabilized, and decommissioned. Alternative E was determined to be the environmentally preferred alternative by the interdisciplinary team.

Alternative F was designed to respond to public request for a water quality rehabilitation alternative. There is no timber harvest or road construction in Alternative E. About 54.5 miles of existing road would be closed, stabilized, and decommissioned.

Comments:

Alternatives

1. We commend the Forest Service for the presentation and disclosure of the estimated quantities of activities planned for each alternative in Tables II-1, II-3, and II-5, and the Chapter II summary tables for alternatives. These tables conveniently summarize and disclose essential information for the action alternatives, which facilitates comparative evaluation of alternatives for the reader of the EIS.

   Some inconsistency, however, exists in the presentation of tabulated information as compared to information in the narrative of Chapter III in regard to prescribed fire. The tabulated burn acreage information in Tables II-1, II-3, and II-5, and Table II-11 indicate that Alternatives B, D, and E involve total burning of 1,133 acres, 714 acres and 655 acres, respectively. The narrative on pages II-80 and II-81, however, indicates that Alternatives B, D, and E involve burning of 3,300 acres, 2,500 acres, and 2,550 acres (i.e., total of understory burning and pile burning), respectively. This inconsistency in burn acreages between alternatives should be corrected and/or explained.

2. The EPA supports the Forest Service selection of Alternative E as the preferred alternative. We recognize that resource trade-offs are involved in land management decisions, and that treatment of lodgepole pine timber stands experiencing mountain pine beetle infestation may result in impacts to other resources. Alternative E appears to strike a reasonable balance with resource trade-offs by treating 1,500 acres of high risk and 443 acres of moderate risk lodgepole pine stands, while avoiding construction of new permanent roads and limiting road construction to short-term temporary roads on gentle terrain (to minimize erosion and sediment transport), and closing and obliterating 54.5 miles of existing roads. It is stated that Alternative E will reduce calculated sediment production by an estimated 288 tons/year (page III-47) by year 2012.

   The EPA particularly supports Forest Service efforts to minimize new road construction, improve existing roads, and obliterate about 54.5 miles of existing roads with the preferred alternative. Improvements to forest road systems and reduction in road density are especially

critical to protecting aquatic health and wildlife resources for the project area. As you know road construction greatly increases the possibility of erosion and sediment transport.

Areas of concern regarding roads include the number of road stream crossings; road drainage; culvert sizing and potential for washout; culvert allowance of fish migration and effects on stream structure; seasonal and spawning habitats; large organic material supplies; and riparian habitats. Undersized culverts should be replaced and culverts which are not aligned with stream channels or which present fish passage problems and/or serve as barriers to fish migration should be adjusted.

We support inspections and evaluations to identify existing road conditions that cause or contribute to nonpoint source pollution and stream impairment. We also recommend that the FEIS describe the frequency of maintenance activities for roads and whether adequate funding is anticipated for road maintenance. Road blading should focus on reducing road surface erosion and sediment delivery. Blading of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided.

We recommend that the FEIS describe necessary inspection and non-traffic-generated maintenance activities for closed, but unobliterated, roads, and describe obliteration and rehabilitation methods and their effectiveness for roads whose road prisms will be physically removed.

3. It is stated that there are presently 198 road stream crossings in the Twelvemile Creek watershed. Road stream crossings increase opportunities for stream sedimentation. How many of the 198 stream crossings in the Twelvemile Creek drainage will be removed with the closure and decommissioning of 54.5 miles of road in the project area? How many of these streams crossings are culverted vs. bridge spans? Are culverts adequately sized and properly aligned with the stream channel?

4. The EPA would be very concerned with the selection of Alternative B since this alternative generates more sediment than any other alternative (page III-43), and Twelvemile Creek already suffers from heavy sedimentation due to past disturbances in the watershed (particularly the lower reach below Trapper Cabin Creek). We are pleased that the Forest Service has included efforts to reduce sediment production with the preferred alternative.

5. The analysis of sediment production in Chapter III (page III-47) indicates that Alternative E would generate an estimated additional 125 tons of sediment in its first year, but would eventually reduce sediment production by 288 tons/year by year 2012. It is stated that Alternative F would generate an estimated additional sediment production of 84 tons in the first year, and would achieve a sediment reduction of 267 tons/year by 2004. It is not clear why

the long term level of sediment reduction with Alternative F (267 tons) would be less than the long term sediment reduction with Alternative E (288 tons), when Alternative F includes no logging or temporary road construction. If this difference is due to the additional reconditioning and reconstruction of existing roads to meet BMPs (included in Alternative E, but apparently not with Alternative F), we ask why this reconditioning/reconstruction work was not also included in Alternative F. It is stated (page II-12) that Alternative F was designed as a "water quality rehabilitation alternative." It would appear appropriate to include all sediment reduction improvements to roads in the water quality alternative.

6. The discussion of soils in Chapter III (page III-36) indicates that all soils have high erosion potentials with severe limitations in terms of sediment production. Is winter logging and operation on dry ground (e.g., less than 18% moisture) be proposed to minimize erosion in sensitive areas? Are harvest units in the erosive soils on steeper slopes needed? Should the most sensitive areas be avoided? What is proposed to reduce erosion with harvest and tractor yarding on erosive soils?

   We recommend that skidders, dozers, or other heavy equipment not be allowed for skidding logs within the buffer strip, and that log skidding outside the buffer strip on erosive slopes only be allowed on frozen ground or when soil moistures are below 18%. Erosion control should be kept current with skidding activities.

   We are pleased that a buffer strip would be left between the stream and all harvest units (page III-99). How wide will this buffer strip be? We recommend that the buffer be 300 feet for fish bearing streams to reduce potential for sediment transport and adverse impacts to fisheries. Will buffer zones be established between burn units and streams? Will tractor logging even on low moisture soils (i.e., < 18% moisture) in units with erosive soils that are adjacent to streams provide adequate protection for streams? Will the new temporary roads be constructed in areas of lower erosion and sediment transport potential?

7. There is minimal discussion of wetlands in the DEIS. Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, fens and similar areas.

   The FEIS should indicate if wetlands lie within the project area and describe impacts to wetlands, and explain how impacts, if any occur, will be mitigated (i.e., mitigation means sequence of avoidance, minimization, rehabilitation, and then compensation for unavoidable impacts). We recommend that heavy equipment not be operated in wetlands, including perennial seeps and springs. We encourage the Forest Service to delineate and mark the riparian areas boundaries and perennial seeps and springs and wetlands on maps and on the

ground before harvesting so that timber contractors will be able to avoid them.

We also recommend that wetlands in any area to be sprayed with herbicides be identified and flagged on the ground to assure that herbicide applicators are aware of the location of wetlands, and thus, can avoid spraying in or near wetlands.

Executive Order 11990 requires that all Federal Agencies protect wetlands. In addition national wetlands policy has established an interim goal of **No Overall Net Loss of the Nation's remaining wetlands**, and a long-term goal of increasing quantity and quality of the Nation's wetlands resource base. Wetland impacts should be avoided, and then minimized, to the maximum extent practicable, and then unavoidable impacts should be compensated for through wetland restoration, creation, or enhancement. The DEIS has insufficient information to determine potential project impacts to wetlands.

8. It is noted on (pages III-36, 37) that the St. Regis River and Twelvemile Creek are listed as a water quality limited water bodies by the Montana Department of Environmental Quality (MDEQ). These listed streams will need development of Total Maximum Daily Loads (TMDL). The TMDL process identifies the maximum load of a pollutant (e.g., sediment, nutrient) a waterbody is able to assimilate and fully support its designated uses; allocates portions of the maximum load to all sources; identifies the necessary controls that may be implemented voluntarily or through regulatory means; and describes a monitoring plan and associated corrective feedback loop to insure that uses are fully supported.

   We recommend that the Forest Service contact the Montana Department of Environmental Quality (i.e., Stuart Lehman at 444-5319 in Helena) to ensure MDEQ concurrence on, and coordination of, proposed activities in the St. Regis River and Twelvemile Creek drainages with the MDEQ's TMDL development.

9. The Chapter III section on Water Quality provides a good description of the existing conditions on Twelvemile Creek.

<u>Monitoring</u>

10. The sections on monitoring on pages III-151, 152 and in Appendix F do not clearly indicate if any aquatics/hydrologic monitoring is proposed to provide site-specific effectiveness monitoring to determine impacts of logging, road construction, and road closure work. The section on Water Quality in Chapter III (page III-39) indicates that monitoring stations were on the Twelvemile Creek watershed between 1979 and 1987 (two stations on Twelvemile Creek and three stations on tributaries). Are any of these monitoring stations still in use?

11. The EPA believes that water quality/aquatics monitoring is a necessary and crucial element in

identifying and understanding the consequences of one's actions, and should be an integral part of any management decision. We believe the EIS should include a commitment to carry out adequate water quality monitoring activities to assure that the project's aquatic and hydrologic effects are detected. We believe monitoring information should be included in the NEPA documents.

How will the Forest Service detect actual effects of the proposed activities on water quality and the aquatic ecosystem, and know that BMPs are effective (or ineffective), and in-stream beneficial uses maintained (or not maintained), and whether corrective actions may be needed without adequate water quality monitoring? How will the effectiveness of road improvements and closures on reducing sediment production be known if some aquatics monitoring is not carried out to confirm or document the reductions?

The BMP Implementation Process should require evaluation of BMP effectiveness in protecting water quality and maintaining water quality standards are maintained and protecting beneficial uses. Water quality monitoring of streams that are subject to potential timber harvest activities is needed to provide a feedback mechanism to management to ensure that BMPs are effective. Some monitoring is needed to validate and document for site-specific application of BMP effectiveness for future development and improvement of BMPs.

We believe some minimal level of monitoring should be carried out during and after the timber sale to detect hydrologic or aquatic habitat effects that may actually occur in potentially affected drainages. We realize Forest Service monitoring budgets are limited, however, some level of monitoring in drainages that are prioritized for potential affects is appropriate. Will Twevelmile Creek and the St. Regis River (water quality limited water bodies in need of TMDLs) or Knox-Brooks Timber Sales Area streams which flow into water quality limited water bodies be monitored?

We would like to see clear water quality monitoring goals and objectives identified and described in the FEIS (e.g., what questions are to be answered; what parameters are to be monitored; where and when monitoring will occur; who will be responsible; how the information will be managed and evaluated; and what actions will be taken based on that information).

The monitoring plan should at a minimum include sampling design, methodology, parameters, sampling site locations shown on a map, and frequency or pattern of sampling. The EPA strongly recommends incorporation of a biological component, such as rapid bioassessments using macroinvertebrates, in a monitoring program. Monitoring of the aquatic biological community is desirable since the aquatic community integrates the effects of pollutant stressors over time and, thus, provides a more holistic measure of impacts than grab samples of turbidity and suspended sediment. We encourage you to use the following reference materials in designing and disclosing a monitoring program:

"Monitoring Guidelines to Evaluate Effects of Forestry Activities on Streams in the Pacific Northwest and Alaska", Lee H. McDonald, Alan W. Smart, and Robert C, Wissmar; May 1991; EPA/910/9-91-001.

"Rapid Bioassessment Protocols for Use in Streams and Rivers", James A. Plafkin; May 1989; EPA/444/4-89-001.

Such specific monitoring information should be disclosed in the FEIS to assure that the effects (i.e., physical, chemical and biological effects) of the proposed activities on water quality and the aquatic ecosystem will be determined, and to validate and document BMP effectiveness in protecting water quality, beneficial uses, and Montana Water Quality Standards. This specific information is also needed to provide assurance that instream beneficial uses will be maintained. The effectiveness of mitigation measures can only be known if monitoring is performed and data collected. Without this information the EIS is inadequate to fully assess the role of monitoring and evaluation in project implementation.

Stewardship Contracting

12. We understand that the Knox-Brooks Timber Sales and Road Rehabilitation Project would be implemented under the stewardship contracting authority of Section 347 of the 1999 Appropriations Bill (page III-50). As we understand this program, it allows the trading of goods for services (i.e., rehabilitation costs are paid for through the value of forest products harvested). We also understand the 25 percent payment to Counties does not apply under this program (page III-51). Sale preparation costs are stated to be lower, and sale administration costs are stated to be higher, both by unknown amounts (page III-51). Contracts are awarded on the basis of best value to the government, rather than on high bid. We have some comments and questions regarding this novel stewardship contracting method of carrying out timber sale projects as follows:

* It is stated (page II-18) that the Forest Service does not have a tool to conduct an economic analysis for stewardship contracts. We ask how the Forest Service will determine the best value to the government in awarding contracts if it doesn't have tools to conduct economic analysis?

* Will the value of trading timber be sufficient to equal the costs of treatment?

* A significant new element of Section 347 contracting according to our understanding is to include multi-party monitoring as part of the process. What procedures would be followed and which parties would be involved in this multi-party monitoring of the proposed treatments on the Knox-Brooks Project?

Wildlife and Old Growth

13. We are concerned that all alternatives result in a determination of "likely to adversely affect the bull trout" (page III-99). The final EIS should include the Biological Opinion or formal concurrence of the U.S. Fish and Wildlife Service in regard to the effects to the listed bull trout.

14. We are concerned about the harvest of 33 acres of old growth in two stands including larch and Douglas fir that survived the 1910 fire (page II-19). We recommend that the large old larch and Douglas fir (e.g., over 10 inches in diameter) be retained while old lodgepole pine in these stands are harvested.

15. We also note that with the advent of all terrain vehicles (ATVs) and off-road vehicles (ORVs) it is difficult to effectively restrict motorized access to public lands with simple road closures (i.e., gated closures). An effective policing and enforcement program is needed to assure that motorized access does not occur in restricted areas. The FEIS should describe the Forest Service inspection and enforcement program that will be used to assure that ATVs and ORVs will not violate motorized vehicle access limitations. It is important that the stated wildlife protection objectives be achieved, and these goals can only be achieved if enforcement of road access restrictions occurs.

16. Thermal cover for big game is not discussed in the DEIS. To what extent will proposed timber harvest and large forest openings created by the timber harvest impact big game thermal cover?

17. Would it be appropriate to place larger harvest units adjacent to existing forest openings in order to preserve areas that are currently less fragmented?

Noxious Weeds

18. The DEIS includes some discussion of actions the Forest will take to control noxious weeds (beginning on page III-71). The EPA supports development of a strategy for prevention, early detection of invasion, and control procedures for the major weed species threats on the Forest. Spread of noxious weeds and exotic (non-indigenous) plants is among the greatest threats to biodiversity. Many noxious weeds can out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Noxious weeds tend to gain a foothold where there is disturbance in the ecosystem, such as road building, fire, or logging activities.

    The EPA encourages the early control of noxious weed infestations to stop the spread of the infestations and avoid wider future use of herbicides, which could correspondingly have more adverse impacts on biodiversity, water quality and fisheries. Weed plant seeds can be carried

from a source area by the wind, wildlife or pack animals, on equipment tires and tracks, by water, and on the boots of hikers. Care should be taken to implement control procedures in all source areas to avoid spread to unaffected areas. Measures for preventing spread from source areas to uninfested areas include:

< Noxious weeds can be spread by vehicles. Ensure that equipment tracks and tires are cleaned prior to transportation to an uninfested site. The Forest Service may want to consider some restrictions on vehicles to reduce potential for reinfestation of the area by noxious weeds after treatment.

< Focus control efforts at trail heads and transportation corridors to prevent tracking of seed into uninfested areas.

< Attempt to control the spread from one watershed to another to reduce water as a transport vector.

< If a localized infestation exists and control is not a viable option, consider rerouting trails or roads around the infestation to reduce available vectors for spread.

< Establish an education program for industrial and recreational users and encourage voluntary assistance in both prevention and control activities.

< Reseed disturbed sites as soon as possible following disturbance.

Also, if sufficient vegetation is killed (e.g., by prescribed burning) it may warrant revegetation efforts. Revegetation (reseeding with native grass mix) should be considered for any site within the control area where the vegetation density is low enough to allow reinfestation or introduction of other noxious weeds, or erosion. The goal of the seeding program should be to establish the sustainability of the area. Where no native, rapid cover seed source exists, we recommend using a grass mixture that does not include aggressive grasses such as smooth brome, thereby allowing native species to eventually prevail. Mr. Phil Johnson, Botanist, Montana Dept. of Transportation, in Helena at 444-7657, may be able to provide guidance on revegetation with native grasses.

We also note that hay can be a source of noxious weed seed. Hay/straw is used as mulch to slow erosion and encourage seed germination, and used to feed horses in hunting and recreation camps, and as wildlife feed during harsh winters. The Federal Noxious Weed Act of 1974 prohibits the interstate transport of noxious weeds or weed parts, such as seed. Montana has a weed free certification program for hay. Forest Service staff should contact the County Extension Agent regarding this program. The Forest Service may want to discuss the option of requiring use of certified weed free hay in permits or projects. Cattle that are released on

grazing allotments or horses used on public lands can transport undigested weed seed and spread it in their manure. Another option for preventing the introduction of noxious weeds it to require cattle and horses, especially those coming from areas with noxious weeds, to be penned and fed weed free hay for several days prior to being released on public lands.

19. It is stated that all alternatives would use integrated pest management techniques including herbicides to manage noxious weeds (page III-99), and that herbicide use would be limited to picloram, 2,4-D, glyphophate, and dicamba (page III-73). We support integrated pest management, but we recommend that the USFS include an objective indicating that herbicides, pesticides, and other toxicants and chemicals be used in a safe manner in accordance with Federal label instructions and restrictions that allow protection and maintenance of water quality standards and ecological integrity, and avoid public health and safety problems. To better meet the public disclosure purposes of NEPA we recommend that the pesticide labels showing the use precautions and restrictions for the herbicides to be used during spraying; and that the acute toxicity levels of the proposed herbicides be shown in the appendices of the FEIS. It should be unequivocally stated that no herbicide spraying will occur in wetlands or other aquatic areas (seeps, springs, streams, etc.,) to avoid herbicide drift into wetlands that could adversely affect wetland functions such as food chain support and habitat for wetland species.

We note that many herbicides such as picloram (3, 6, Dichloropicolinic acid, or Tordon) and dicamba (Banvel) have potential to be transported to surface and ground waters. The Montana Department of Agriculture (MDA) considers picloram to have high potential for leachability, since it does not readily adsorb to soils, does not photo degrade or volatilize. Picloram has relatively high water solubility (~300,000 ppm), a relatively low adsorption coefficient, and a moderate half life (~ 40 days). Dicamba has a water solubility of approximately 400,000 ppm, and a half life of approximately 14 days. The MDA has found picloram (and clopyralid) in ground water in the Fairfield Bench area northwest of Great Falls where there are sandy clay soils. Clopyralid and picloram levels in ground water have been in the part per billion levels, below those considered a risk for human health.

We note in particular that picloram can persist and be transported in water systems for long periods (e.g. picloram solubility in water of 430 mg/l). Picloram is also relatively toxic to aquatic life having a 96 hour LC50 of 3.5 mg/l (cutthroat trout). We also note that Tordon application by a County Weed District in Wyoming (in accordance with herbicide label restrictions) resulted in transport of picloram through ground water a distance of several miles. Subsequent pumping of downstream ground water for household use resulted in the death of garden and household plants, evidencing the continuing presence of picloram in ground water. Mr. Edward Stearns, pesticide specialist in EPA's Denver Regional Office (telephone number (303) 312-6946), can provide further information regarding this particular episode of ground water contamination from picloram application.

In areas of highly permeable, sandy gravelly soil, and high ground water there may be potential for herbicides like picloram to leach to ground water. The Montana Department of Agriculture considers 50 feet of soil depth to be sufficient depth of soil to mitigate the potential for the movement of picloram to ground water, although less permeable soils may allow reduction in this safe soil depth to ground water. The vulnerability and sensitivity of area ground waters to contamination from proposed herbicide use should be considered. Relevant information on ground water in areas proposed for herbicide application include depth to ground water, seasonal variation in ground water depth, soil types-permeability-transmissibility, leaching potential, ground water uses, proximity of herbicide application areas to drinking water sources and/or wells, proximity of herbicide application areas to aquifer recharge areas, direction of ground water flow, ground water-surface water connections and interactions, etc., should be disclosed. The Ground Water Information Center at the Montana Bureau of Mines & Geology in Butte, MT at 496-4153 may have well log information for the area that would help establish ground water levels.

The Montana Department of Agriculture has developed a Generic Management Plan, which has been approved by EPA, for the management of agricultural chemicals in Montana, including herbicides, and the protection of ground water resources. The Generic Management Plan serves as a basis from which Pesticide Specific Management Plans can be developed by the Montana Dept. of Agriculture and EPA. The Forest Service (and BLM) should assure that their proposed use of herbicides is consistent with this Generic Management Plan and future Pesticide Specific Management Plans, and is coordinated with the Montana Dept. of Agriculture (contact Ms. Donna Rise, in Helena at 406-444-3676).

Are there any potable water uses (e.g., cabins, farm houses) immediately downstream or downgradient of proposed areas of herbicide applications? Are there any downstream agricultural water uses downstream or downgradient of the proposed areas of herbicide applications? We believe that all potable, agricultural, and recreational uses of surface and ground water immediately downstream or downgradient from proposed herbicide application areas should be disclosed and evaluated for potential effects from herbicide applications.

20. Information on the carcinogencity of chemicals proposed for use should be presented. We note that evaluation of the carcinogenicity of these chemicals is an ongoing process, and as studies progress, information may change. The website for EPA information regarding the cancer classification for pesticides and herbicides is <http://www.epa.gov/pesticides/carlist>.

We also believe that health concerns other than carcinogenicity stemming from possible exposure to low levels of herbicides, such as endocrine disruption or reproductive effects should be addressed in the EIS proposing significant amounts of herbicide application. There is controversy over possible endocrine effects of 2, 4, D.

21. Prescribed burning in certain areas may have the potential to stimulate or promote noxious weed problems (e.g., Dalmation toadflax or leafy spurge growth) or destroy insects that may have been planted for biological weed control. Have the potential effects of prescribed burns upon noxious weed problems been considered? We suggest that such considerations be evaluated for each individual burn unit. Burning can promote weed growth, but burning followed by herbicide use can bring effective weed control.

Air Quality and Fire

22. The EPA does not object to the increased use of prescribed fire and underburning to restore forest and grassland ecosystems. We believe that judicious use of prescribed fire can improve the health of ecosystems and reduce health and safety risks of uncontrolled wildfires. A well planned and managed prescribed fire and underburning program can be carried out without unduly impacting other resources (fisheries, wildlife habitat, and noxious weed spread and air quality).

As you are aware, smoke from fire contains air pollutants, including tiny particulates which can cause health problems, especially for people suffering from respiratory illnesses. Smoke can also reduce visibility and diminish the appreciation of scenic vistas like the Selway Bitterroot or Mission Mountains Wilderness Areas.

We recommend that the USFS incorporate use of techniques that minimize air pollutant emissions from fire and the adverse impacts of smoke on public health and the environment. These techniques include scheduling burning during favorable weather conditions that allow good smoke dispersal, limiting the amount of land burned at any one time, and mechanical pretreatment of fuels.

Sound fire management practices include:

* Reducing the dangerous build-up of dead trees, branches, and vegetative matter on forest floors by using prescribed fire or the selective thinning, pruning, or cutting and removal of trees by mechanical means.

* Using smoke management techniques during burns to minimize smoke in populated areas as well as visibility effects. Each prescribed burn site will have unique characteristics, but in general, smoke impacts can be minimized by burning during weather conditions that provide optimal humidity levels and wind conditions for the types of materials being burned. Smoke impacts can also be minimized by limiting the amount of materials and acreage burned at any one time. Careful scheduling of the many burning activities to coincide with proper climatological and meteorological conditions helps avoid air quality problems.

* Whenever possible, mechanical thinning (such as selective timber thinning, pruning, or cutting of small trees) can be used as an effective "pretreatment" to prescribed burning.

* Implementing fire hazard awareness and mitigation programs for the public.

Conduct of prescribed fires immediately before precipitation events and runoff periods may result in stream sedimentation and nutrient transport to surface waters. We recommend low intensity fire in specific planned locations spread out over time so that some vegetative cover becomes reestablished before runoff periods.

While in general we concur with the use of prescribed burning to help achieve forest health, we suggest that there may be circumstances where it may be appropriate to use mechanical treatments in lieu of prescribed burns to address fuel accumulation in areas. Mechanical treatments may be appropriate where the risk of the escape of prescribed burns is high and where nearby home developments may be threatened.

Additional information on wildland fire and air quality issues is available from EPA's website <www.epa.gov/airlinks/>.

23. We do have several comments on the air quality analysis information in the DEIS as follows:

a) Figure III-10. Please show the location of the Flathead Indian Reservation with respect to the project area.

b) Page III-83 - Existing Conditions. We recommend that a windrose for the Superior area be included in the Final EIS so that local residents can see the predominant wind directions for their area. Windroses, representative of each quarter of the year, would be beneficial to give the public an idea of the direction of prevailing winds during the spring, summer, and fall seasons when prescribed burning is likely to occur.

c) Page III-87 - Mitigation. If smoke where to settle in the Clark Fork River valley, what mitigation steps would be taken to prevent further air quality impairment?

d) The EPA believes monitoring of activities will be beneficial to improving understanding of impacts upon air quality. We encourage you to develop a monitoring plan to help you establish a quantitative and qualitative understanding of the impacts to air quality. Such a monitoring plan would also help to validate quantitative predictions for future activities.